APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/549,620	04/14/2000	Anoop Kumar Mathur	H16-26292	9366

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EXAMINER
HIRL, JOSEPH P

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 12/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

Office Action Summary	Applicati n N .		Applicant(s)
	09/549,620		MATHUR ET AL.
	Examiner	'	Art Unit
	Joseph P. Hirl		2121

-- The MAILING DATE of this communication appears on the cover sheet with the corresp ndence address --

Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 October 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *7* .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

DETAILED ACTION

1.   This Office Action is in response to a request for Reconsideration entered

October 18, 2002 for the patent application 09/549,620 filed on April 14, 2000.

2.   The First Office Action of April 11, 2002 is fully incorporated into this Final Office

Action by reference.

3.   The Examiner wishes to thank the Applicant for supplying copies of documents

referenced in the Specification.

4.   The Examiner reminds the Applicant that the Examiner will always interpret each

claim in the broadest reasonable sense. The claims form the metes and bounds of the

invention.

Status of Claims

5.   Claims 1-24 are pending.

Response to Arguments

6.   Applicant's arguments filed on October 18, 2002 related to Claims 1-24 have

been fully considered but are not persuasive.

In reference to Applicant's argument:

Independent claim 1 is directed to a method of enhancing a production recipe and recites: "annotating one or more actions in the production recipe with a desired intention for the action." In contrast,.Kohn describes Multiple-Agent Hybrid Control Architecture. The Multiple-Agent Hybrid Control Architecture "functions as real-time `middleware' to synchronize distributed legacy or new applications." See Kohn, Col. II, lines 31-33. However, Kohn does not teach each element of claim 1 because Kohn fails to describe a method of enhancing a production recipe by "annotating one or more actions in the production recipe with a desired intention for the action."

Examiner's response:

Exclusive of the claims, the specification addresses the subject of annotation in the following manner:

Page 4, lines 26-28: "The following detailed description describes example embodiments of methods to annotate a recipe with user intent information from different sources to generate an advanced recipe."

Page 7, lines 19-21: "The desired state in a process is arrived at using information from different knowledge sources. Thus, a recipe that is annotated with desired state information creates an advanced recipe. (RECIPE + DESIRED STATE = ADVANCED RECIPE.)"

Page 10, lines 28-29: "The data is annotated with detailed contextual descriptions, then generalized to predict outcomes. It determines the value (or signal) statistically from current conditions."

To one of ordinary skill in the art and using a broad view of annotation, each agent in a multiple agent architecture is annotated in a manner that satisfies the above description such that and in a dynamic sense, in the prior art of Kohn, adjusts in an intelligent manner in real time to a nonlinear process.   Kohn, with intelligent agents, has annotated fully the production recipe (**Kohn**, col 1, lines 9-15). Without such annotation (intention of operation), Kohn's Invention could not function.

In reference to Applicant's argument:

Independent claim 3 is directed to a computerized method of generating a production recipe and recites "generating through computer automated operations a recipe comprising a set of actions and the purpose of the underlying process." In contrast, Kohn describes Multiple Agent Hybrid Control Architecture. However, Kohn does not teach each element of claim 3 because Kohn fails to describe a production recipe "comprising a set of actions and the purpose of the underlying process."

Examiner's response:

Again to one of ordinary skill in the art, Kohn's prior art is pervasive with sets of actions all of which have a purpose in achieving real-time control of distributed nonlinear processes (**Kohn**, col 4, lines 57-67; col 5, lines 1-3). Optimal performance is equivalent to fully encapsulating "the purpose of the underlying process."

In reference to Applicant's argument:

Independent claim 6 is directed to a computerized method for controlling a production process and recites "modifying a recipe for a batch processing situation using the data stored in the knowledge repository." In contrast, Kohn describes Multiple-Agent Hybrid Control Architecture. However, Kohn does not teach each element of claim 6 because Kohn fails to describe batch processing or "modifying a recipe for a batch processing situation."

Examiner's response:

To one of ordinary skill in the art, a batch process implies the running of a software program where there is a beginning and an end...non real time or sort-of off line. This is in contrast to the alternative which runs in real time...on top of the situation as it happens. Kohn has the option to run in both on-line and off-line (**Kohn**, col 5, lines 44-57; col 50, lines 64-67).

In reference to Applicant's argument:

Independent claim 9 is directed to a computerized system and recites "a Knowledge Builder," "a Structured Knowledge Repository," and "a Decision Maker." In contrast, Kohn describes Multiple-Agent Hybrid Control Architecture. The Multiple-Agent Hybrid Control Architecture is a collection of agents and

each agent consists of six components. See Figure 2 of Kohn. However, Kohn does not teach each and every claim element arranged as in claim 9 because Kohn fails to teach a computerized system having a Knowledge Builder, a Structured Knowledge Repository, and a Decision Maker.

Examiner's response:

Kohn's terminology maybe different that that of the Applicant, but Kohn's

functionality easily anticipates the Applicant's intentions. A knowledge builder can be

approached in various ways but for sure, Kohn has a knowledge model and knowledge

models build knowledge. Kohn has structured knowledge repository in various forms

including content addressable memory. Finally, Kohn has a decision maker in the form

of a control loop of an agent...control means decision (i.e. **Kohn**, col 48, lines 55-62).

In reference to Applicant's argument:

Independent claim 23 is directed to a computer-readable medium having computer executable instructions for a method of managing a production process. Independent claim 23 recites "generating an advanced recipe comprising a set of actions and the purpose of the underlying process." In contrast, Kohn describes Multiple-Agent Hybrid Control Architecture. However, Kohn does not teach each element of claim 23 because Kohn fails to describe "generating an advanced recipe comprising a set of actions and the purpose of the underlying process.

Examiner's response:

To one of ordinary skill in the art, agents operating in an intelligent real-time

control of distributed nonlinear processes will generate actions that have the purpose of

achieving optimal performance (**Kohn**, col 4, lines 57-67; col 5 lines 1-3).

In reference to Applicant's argument:

Claims 2, 4-5, 7-8, 10-22, and 24, are dependent on claims 1, 3, 6, 9, and 23, respectively, and are patentable over Kohn for the reasons argued above, plus the elements in the claims. For example, dependent claim 2 recites "annotating the one or more actions with a desired state for the action." Kohn fails to describe annotating actions with a desired state. In another example, dependent claim 8 recites that "the recipe contains steps and purposes." Kohn fails to describe a recipe containing purposes. In yet

another example, dependent claim 10 recites that "the recipe is for a batch process." As stated above, Kohn fails to describe batch processing.

Examiner's response:

As identified in the First Office Action, each of the dependent claims, in its own right is rejected. Concerning dependent claim 2 which recites "annotating the one or more actions with a desired state for the action", Kohn's design to achieve optima performance applies. Concerning dependent claim 8, which recites "the recipe contains steps and purposes", one cannot achieve optima performance without steps and purposes. Concerning dependent claim 10 that recites "the recipe is for a batch process", this was addressed above.

In reference to Applicant's argument:

The Office Action must provide specific, objective evidence of record for a finding of a suggestion or motivation to combine reference teachings and must explain the reasoning by which the evidence is deemed to support such a finding. In re Sang Su Lee, 277 F.3d 1338, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002). The Office Action stated "it would have been obvious of one of ordinary skill in the art at the time of the invention to use the teachings of APA to satisfy analysis requirements as set forth in a learning environment to achieve goal setting functionality," which is a mere conclusory statement of subjective belief, so Applicant respectfully submits that the Office Action has not provided objective evidence for a suggestion or motivation to combine Kohn with the Applicant's specification (which is referred to by the Office as APA).

Examiner's response:

To one of ordinary skill in the art such as an engineer that is accustomed to solving problems, the combination of Kohn with APA is not elusive. For sure, artificial intelligence is cognitive work. First Office Action reference applies.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Claims 1 – 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Kohn

et al (U. S. Patent 5,963,447).

Claim 1

Kohn anticipates annotating one or more actions in the production recipe with a

desired intention for the action (**Kohn**, col 4, lines 57 – 62; col 6, lines 14 – 17; col 18,

lines 44 – 45).

Claim 2

Kohn anticipates annotating the one or more actions with a desired state for the

action (**Kohn**, col 4, lines 57 – 62; col 6, lines 14 – 17; col 18, lines 44 – 45; col 2, lines

38 – 40).

Claim 3

Kohn anticipates receiving knowledge from one or more sources (**Kohn**, col 18,

lines 44 – 45); and generating through computer automated operations a recipe

comprising a set of actions and the purpose of the underlying process (**Kohn**, col 1,

lines 8 – 16; col 21, lines 40 – 43; col 4, lines 34 – 37).

Claim 4

Kohn anticipates modifying the recipe (**Kohn**, col 6, lines 14 – 17; col 21, lines 32

– 43).

Claim 5

Kohn anticipates the knowledge is received from a user (**Kohn**, col 18, lines 44 –

45).

Claim 6

Kohn anticipates receiving data from multiple knowledge sources (**Kohn**, col 18,

lines 44 – 45; col 55, lines 34 – 36); storing the data in a structured knowledge

repository (**Kohn**, col 55, lines 37 – 38); and modifying a recipe for a batch processing

situation using the data stored in the knowledge repository (**Kohn**, col 5, lines 44-57; col

50, lines 64-67).

Claim 7

Kohn anticipates modifying the recipe further comprises using inputs from a user

(**Kohn**, col 18, lines 44 – 45; col 21, lines 32 – 43).

Claim 8

Kohn anticipates the recipe contains steps and purposes (**Kohn**, col 4, lines 34 –

37).

Claim 9

Kohn anticipates a Knowledge Builder to derive from multiple knowledge sources

(**Kohn**, col 18, lines 44 – 45); a Structured Knowledge Repository to store and organize

the knowledge (**Kohn**, col 18, lines 54 – 59); and a Decision Maker to use the

knowledge stored in the structured knowledge repository to identify one or more

modifications of recipe steps (**Kohn**, col 18, lines 64 – 67; col 19, lines 1 – 6).

Claim 10

Kohn anticipates the recipe is for a batch process (**Kohn**, col 1, lines 9 – 16).

Claim 11

Kohn anticipates the knowledge builder extracts of knowledge from multiple

sources through one or more Machine Learning techniques (**Kohn**, col 10, lines 54 –

57).

Claim 12

Kohn anticipates wherein the different Machine Learning techniques act

independently from each other (**Kohn**, col 10, lines 54 – 57).

Claim 13

Kohn anticipates knowledge builder is scalable by adding additional the Machine

Learning techniques (**Kohn**, col 2, lines 16 – 22).

Claim 14

Kohn anticipates explanation-based learning, memory based learning, situation-

dependent learning (**Kohn**, col 1, lines 9 – 16).

Claim 15

Kohn anticipates the knowledge-building component further receives feedback

from a user (**Kohn**, col 18, lines 44 – 45; col 1, lines 9 – 16).

Claim 16

Kohn anticipates the knowledge builder is scalable to incorporate new knowledge

(**Kohn**, col 19, lines 7 – 13; col 2, lines 16 – 22).

Claim 17

Kohn anticipates the knowledge builder is scalable to incorporate new knowledge extraction techniques (**Kohn**, col 19, lines 7 – 13; col 2, lines 16 – 22).

Claim 19

Kohn anticipates the Structured Knowledge Repository organizes knowledge and provides links between specific pieces of information and the functional purposes to which the knowledge can be put (**Kohn**, col 18, lines 54 – 59; col 20, lines 10 – 24).

Claim 20

Kohn anticipates the Decision Maker assembles the knowledge into an answer to a query (**Kohn**, col 18, lines 65 – 67; col 19, lines 1 – 6).

Claim 21

Kohn anticipates the answer to the query is in the form of a recipe modification that meets desired goals and constraints (**Kohn**, col 18, lines 65 – 67; col 19, lines 1 – 6).

Claim 22

Kohn anticipates the decision maker displays knowledge to a user (**Kohn**, col 1, lines 11 – 15).

Claim 23

Kohn anticipates receiving one or more desired purposes for the production process; receiving a recipe (**Kohn**, col 4, lines 57 – 62; col 6, lines 14 – 17; col 18, lines 44 – 45); and generating an advanced recipe comprising a set of actions and the

purpose of the underlying process (**Kohn**, col 1, lines 8 – 16; col 21, lines 40 – 43; col 4,

lines 34 – 37).

Claim 24

Kohn anticipates the method further comprises modifying the advanced recipe in

response to a user (**Kohn**, col 18, lines 44 – 45; col 21, lines 32 – 43).

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohn et

al in view of Acknowledged Prior Art (U. S. Patent 5,963,447, referred to as **Kohn**;

Specification, referred to as Acknowledged Prior Art, **APA**).

Claim 18

Kohn does not teach structured knowledge repository uses abstraction-

decomposition space (ADS) techniques. However, APA does teach structured

knowledge repository uses abstraction-decomposition space (ADS) techniques (**APA**,

page 12, lines 6 – 30; page 13, lines 1 – 6). It would have been obvious of one of

ordinary skill in the art at the time of the invention to use the teachings of APA to satisfy

analysis requirements as set forth in a learning environment to achieve goal setting functionality.

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence Information

Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner, Joseph P. Hirl, whose telephone number is

(703) 305-1668. The Examiner can be reached on Monday – Thursday from

6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the

Examiner's supervisor, John Follansbee can be reached at (703) 305-8498.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

or faxed to:

(703) 746-7239 (for formal communications intended for entry);

or faxed to:

(703) 746-7240 (for informal or draft communications with notation of

"Proposed" or "Draft").

Hand-delivered responses should be brought to:

Receptionist,

Crystal Park II,

2121 Crystal Drive,

Arlington, Virginia.

Joseph P. Hirl

JOHN A. FOLLANSBEE
PRIMARY EXAMINER

December 10, 2002